Claims

1) Nucleic acid sequence encoding a 22.5 kD *Streptococcus uberis* protein or a part of said nucleic acid sequence that encodes an immunogenic fragment of said protein, said nucleic acid sequence or said part thereof having at least 85 % homology with the nucleic acid sequence of the *Streptococcus uberis* protein gene as depicted in SEQ ID NO: 1.

2) Nucleic acid sequence or part thereof according to claim 1, characterized in that the sequence has at least 90 %, preferably 93 %, more preferably 95 % homology with the nucleic acid sequence of the *Streptococcus uberis* protein gene as depicted in SEQ ID NO: 1

3) DNA fragment comprising a nucleic acid sequence according to claim 1 or 2.

4) Recombinant DNA molecule comprising a nucleic acid sequence according to claim 1 or 2 or a DNA fragment according to claim 3, under the control of a functionally linked promoter.

5) Live recombinant carrier comprising a nucleic acid sequence according to claim 1 or 2, a DNA fragment according to claim 3 or a recombinant DNA molecule according to claim 4.

6) Host cell comprising a nucleic acid sequence according to claim 1 or 2, a DNA fragment according to claim 3, a recombinant DNA molecule according to claim 4 or a live recombinant carrier according to claim 5.

7) A 22.5 kD *Streptococcus uberis* protein or an immunogenic fragment of said protein having a length of at least 33 amino acids, characterized in that said protein or immunogenic fragment thereof has a sequence homology of at least 93 % to the amino acid sequence as depicted in SEQ ID NO: 2.

8) A 22.5 kD *Streptococcus uberis* protein or an immunogenic fragment thereof according to claim 7, having an amino acid sequence homology of at least 94%, preferably 95 %, more preferably 96% to the amino acid sequence as depicted in SEQ ID NO: 2.

9) A 22.5 kD *Streptococcus uberis* protein or an immunogenic fragment of said protein, according to claim 7 or 8, characterized in that said protein or immunogenic fragment is encoded by a nucleic acid sequence according to claim 1 or 2.

10) A 22.5 kD *Streptococcus uberis* protein or an immunogenic fragment thereof, according to claims 7-9 for use in a vaccine.

11) Use of a 22.5 kD *Streptococcus uberis* protein, or an immunogenic fragment of said protein having a length of at least 6 amino acids, said protein or immunogenic fragment thereof having an amino acid sequence homology of at least 70%, preferably 80%, more preferably 85% with the amino acid sequence as depicted in SEQ ID NO: 2 for the manufacturing of a vaccine for combating *Streptococcus uberis* infection.

12) Use of a nucleic acid sequence according to claim 1 or 2, a DNA fragment according to claim 3, a recombinant DNA molecule according to claim 4, a live recombinant carrier according to claim 5, a host cell according to claim 6 or a protein according to claims 7-9 or an immunogenic fragment thereof for the manufacturing of a vaccine for combating *Streptococcus uberis* infection.

13) Vaccine for combating *Streptococcus uberis* infection, characterized in that said vaccine comprises a 22.5 kD *Streptococcus uberis* protein or an immunogenic fragment of said protein having a length of at least 6 amino acids, said protein or immunogenic fragment thereof having an amino acid sequence homology of at least 70%, preferably 80%, more preferably 85% with the amino acid sequence as depicted in SEQ ID NO: 2 and a pharmaceutically acceptable carrier.

14) Vaccine for combating *Streptococcus uberis* infection, characterized in that said vaccine comprises a nucleic acid sequence according to claim 1 or 2, a DNA fragment according to claim 3, a recombinant DNA molecule according to claim 4, a live recombinant carrier according to claim 5, a host cell according to claim 6 or a protein or an immunogenic fragment thereof according to claims 7-9 and a pharmaceutically acceptable carrier.

15) Vaccine for combating *Streptococcus uberis* infection, characterized in that said vaccine comprises antibodies against a protein or an immunogenic fragment thereof according to claims 7-9 and a pharmaceutically acceptable carrier.

16) Vaccine according to claims 13-15, characterized in that said vaccine comprises an adjuvant.

17) Vaccine according to claims 13-16, characterized in that said vaccine comprises an additional antigen derived from a virus or micro-organism pathogenic to cows, an antibody against such an antigen or genetic information encoding said antigen and/or a pharmaceutical component.

18) Vaccine according to claim 17, characterized in that said virus or micro-organism pathogenic to cows is selected from the group of Bovine Herpesvirus, bovine Viral Diarrhoea virus, Parainfluenza type 3 virus, Bovine Paramyxovirus, Foot and Mouth Disease virus, *Pasteurella haemolytica*, Bovine Respiratory Syncytial Virus, *Theileria* sp., *Babesia* sp., *Trypanosoma species*, *Anaplasma* sp., *Neospora caninum*, *Staphylococcus aureus*, *Streptococcus agalactiae*, Mycoplasma, *E. coli*, *Enterobacter*, *Klebsiella*, *Citrobacter* and *Streptococcus dysgalactiae*.

19) Method for the preparation of a vaccine according to claims 13-18, said method comprising the admixing of a nucleic acid sequence according to claim 1 or 2, a DNA fragment according to claim 3, a recombinant DNA molecule according to claim 4, a live recombinant carrier according to claim 5, a host cell according to claim 6, a protein according to claims 7-9 or antibodies against a protein according to claims 7-9, and a pharmaceutically acceptable carrier.

20) A diagnostic kit comprising suitable detection means and a nucleic acid sequence according to claim 1 or 2 or a or primer thereof, or a protein or immunogenic fragment thereof according to claims 7-9, or antibodies that are reactive with a protein according to claims 7-9.